



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/698,249	10/30/2000	Dengwei Fu	1997.0010003	6244

7590

12/17/2003

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.

Attorneys at Law

Suite 600

1100 New York Avenue, N.W.

Washington, DC 20005-3934

EXAMINER

MAI, TAN V

ART UNIT	PAPER NUMBER
2124	10

DATE MAILED: 12/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/698,249

Applicant(s)

FU ET AL.

Examiner

Tan V Mai

Art Unit

2124

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) 20-31 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-19 is/are allowed.
- 6) ☒ Claim(s) 32-34 is/are rejected.
- 7) ☒ Claim(s) 35 and 36 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 9.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Art Unit: 2124

1. (Without Traverse) Applicant's election without traverse of Group I, Claims 1-19 and 32-36, in Paper No. 8 is acknowledged.

2. The examiner respectfully requests all the copy of technical references cited in Information Disclosure Statement filed on 8-28-03.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robinson et al.

As per claim 32, Robinson et al disclose the invention substantially as claimed, e.g., see Fig. 5, including: the "binary number electrical signals" are "divided" to "subgroup", i.e., "most significant bit", "next two two most significant bits",.. (e.g., see abstract). These features are considered the claimed "**determining at least two subangles**, the combination of which subangles represent the polar angle φ ". It would have been obvious to a person having ordinary skill in the art at the time the invention was made to design the claimed invention according to Robinson et al's teachings because the reference is a **Cartesian coordinates to polar coordinates** circuit as claimed

As per claim 33, the claim adds "memory device". Robinson et al do show Sin/Cos PROM (22).

As per claim 34, the claim adds "using a trigonometric function of a subangle as an approximation for the subangle". Robinson et al do show the claimed feature in Fig. 5.

5. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maas, III.

Maas, III discloses the invention substantially as claimed, e.g., see "SUMMARY OF THE INVENTION", especially col. 3, lines 16-35, " ...**converting** the first and second centered **images from Cartesian coordinates to polar coordinates** to produce first and second polar centered images; and estimating the correction angle for the first and second images by **estimating a correction angle** for the first and second polar centered **images** according to the methods ...". Therefore, these features are considered the claimed "**determining at least two subangles**, the combination of which subangles represent the polar angle ". It would have been obvious to a person having ordinary skill in the art at the time the invention was made to design the claimed invention according to Maas, III's teachings because the system having is a **Cartesian coordinates to polar coordinates** device as claimed.

6. Claims 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maas, III as applied to claim 32 above, and further in view of Fox et al (Applicants admission Prior Art).

As per claim 33, the claim adds "memory device". Fox et al do show a Sine/Cosine generator having ROMs. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine Fox et al "ROMs" in Maas, III, thereby making the claimed invention, because the proposed system is a

Cartesian coordinates to polar coordinates device having memory device as claimed.

As per claim 34, the claim adds "using a trigonometric function of a subangle as an approximation for the subangle". Fox et al do show the claimed feature.

7. Claims 35-36 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Cited references are art of interest.

9. The following is an examiner's statement of reasons for allowance: the recorded references do NOT teach or suggest: (1) the detail features as recited in independent claims 1, 8 and 16; and (2) the detail features as recited in dependent claims 34-35.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tan V. Mai whose telephone number is (703) 305-9761. The examiner can normally be reached on Tue-Fri from 6:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki, can be reached on (703) 305-9662. The fax phone numbers for the organization where this application or proceeding is assigned are:

After-final (703) 746-7238

Official (703) 746-7239

Non-Official/Draft (703) 746-7240.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.



TAN V. MAI
PRIMARY EXAMINER